

# Photovoltaic Distributed Energy Showcase Resource Demonstration

A partnership among the Federal Energy Management Program, in conjunction with Tennessee Valley Authority (TVA), British Petroleum Solar, the Power Electronics Applications Center, and the ORNL State Partnership Program, in conjunction with the State Energy Office of Tennessee established a photovoltaic (PV) distributed energy resource (DER) demonstration.

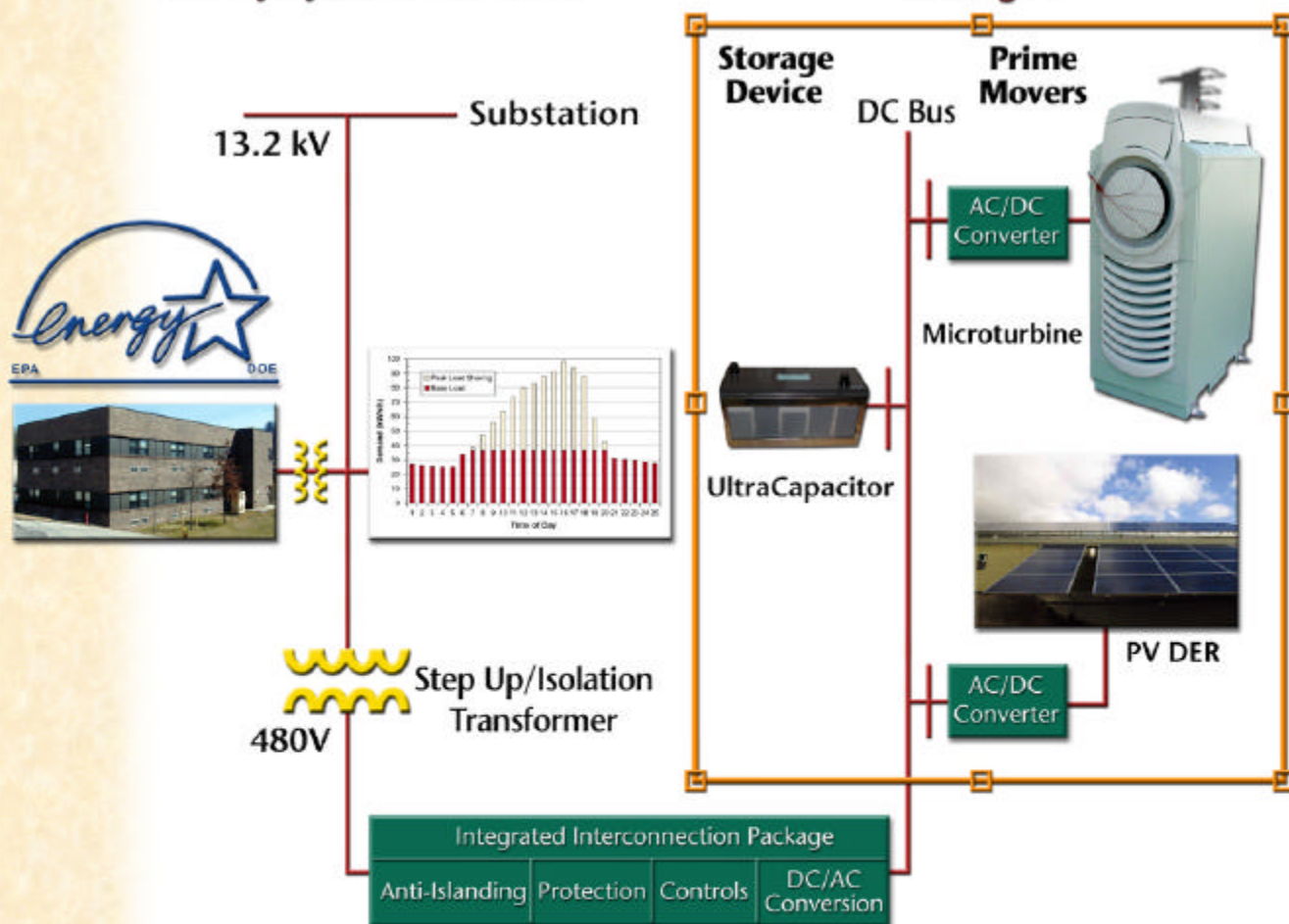
The PV DER produces renewable energy that flows into an existing micro-grid at ORNL's Buildings Technology Center. The micro-grid has both DER and energy storage capabilities:

- 8.5 kW of renewable energy capacity for TVA's Green Power Switch® program
- power quality and storage performance for mission critical equipment
- building integration of PV for utility resource allocation and building net metering
- ancillary shading benefit to the building provided by the PV
- performance evaluation of the PV DER for peak load shaving
- 'lessons learned' for the deployment and integration of DER technologies

*Electricity generated by the PV DER demonstration supports TVA's Green Power Switch® Program, the largest installation of PV-generated power in the Southeast.*

## Utility System Interface

## Microgrid



*Collaborative effort among Oak Ridge, Sandia, and the National Renewable Energy Laboratories*

